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Newport, R.I.

## **Regional Joint-Integrated Air and Missile Defense (RJ-IAMD): An Operational Level Integrated Air and Missile Defense (IAMD) Command and Control (C2) Organization**

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not endorsed by the Naval War College or the Department of the Navy.

Signature: \_\_\_\_\_

15 May 2015

## **Contents Page**

Introduction	1
Background/Problem Statement	2
Unity of Effort	3
Stability	10
Resiliency	16
Counter Argument	19
Rebuttal	19
Conclusion	20
Figures	21
Selected Bibliography	23

## **List of Illustrations**

<b>Figure</b>	<b>Title</b>	<b>Page</b>
1.	Current IAMD C2 Construct	20
2.	Proposed Land-Domain Dominant IAMD C2 Construct	20
3.	Proposed Maritime-Domain Dominant IAMD C2 Construct	21

## **Paper Abstract**

This paper begins with a description of the current Integrated Air and Missile Defense (IAMD) Command and Control (C2) structure and a discussion of its limitations. Next, it introduces and describes a new proposal for IAMD C2. The remainder of the paper focuses on three interconnected but independent arguments (unity of effort, stability, and resiliency) explaining why the proposed IAMD C2 construct is more advantageous. The proposed IAMD C2 structure inserts a standing Regional Joint-Integrated Air and Missile Defense (RJ-IAMD) organization at the operational level, between the theater level Area Air Defense Commander (AADC) and the tactical level service operators. A standing RJ-IAMD organization will be better postured to integrate service and host nation IAMD assets and achieve synchronization during planning and execution. Standing RJ-IAMD organizations will provide more stability in IAMD capabilities across all six phases of operations. RJ-IAMD organizations will be better postured to conduct Phase 0-II activities while providing continuity if augmented or subsumed under a Joint Task Force (JTF) during Phase III. RJ-IAMD organizations provide added layers of redundancy to the current C2 structure. An RJ-IAMD organization, capable of autonomous operations, adds resiliency when accounting for combat degradation or when operating in network degraded/denied environments.

## Introduction

In order to more effectively execute theater Integrated Air and Missile Defense (IAMD), lower level Regional Joint-Integrated Air and Missile Defense (RJ-IAMD) Command and Control (C2) organizations should be created for identified geographic regions based on the Critical Asset List (CAL).<sup>1</sup> This newly proposed C2 structure improves three independent but interconnected aspects of IAMD; unity of effort, stability across the six-phases of operations, and resiliency when accounting for degradation contingencies. Specific operational level benefits over the current IAMD C2 structure include: better service, functional, and coalition integration; better balance of the Operational Factors (Space-Time-Force); and better Operational Protection.<sup>2</sup> Creating RJ-IAMD organizations represents a departure from the traditional C2 methodology which organizes forces under service or functional components. The proposed C2 structure, in an evolutionary approach, organizes forces along functional lines in order to achieve operational level cross-domain expertise and proficiency.

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<sup>1</sup> **Critical Asset List**- A prioritized list of assets or areas, normally identified by phase of the operation and approved by the joint force commander that should be defended against air and missile threats (Joint Publication 3-01 *Countering Air and Missile Threats* (Joint Chiefs of Staff, 2012), GL-10).

<sup>2</sup> **Operational Factors**- A cumulative term pertaining to the factors of space, time, and forces in a given theater of operation...evaluated individually and in combination...(that) need to be roughly in balance...in respect to the...operational...objective. **Operational Protection**- A series of actions and measures conducted in peacetime, crisis, and war designed to preserve the effectiveness and survivability of one's military and nonmilitary sources of power deployed or located within the boundaries of a given theater of operations (*Joint Operational Warfare: Theory and Practice* (Milan Vego, 2009), GL-13,15). **Integration**- The arrangement of military forces and their actions to create a force that operates by engaging as a whole. **Synchronization**- The arrangement of military actions in time, space, and purpose to produce maximum relative combat power at a decisive place and time (Joint Publication 1-02 *Department of Defense Dictionary of Military and Associated Terms* (Joint Chiefs of Staff, 2010), 135, 264).

## Background/Problem Statement

Current doctrine provides a general methodology for organizing C2 in order to conduct theater IAMD.<sup>3</sup> Under the current construct, the Joint Force Air Component Commander (JFACC), as the supported commander, is assigned the duties and responsibilities for theater IAMD. The JFACC, typically dual-hatting as the AADC and the Airspace Control Authority (ACA), centrally controls the IAMD effort through a single theater Air Operations Center (AOC). To assist in these duties, the JFACC can divide the operational area into air defense regions and delegate authorities to Regional Air Defense Commanders (RADCs) as the IAMD threat becomes more robust and complex.<sup>4</sup> In practice these air defense regions are typically service-centric rather than joint organizations. Although centrally controlled through the JFACC'S AOC during execution, these service-centric RADCs report to their respective Services for planning and execution. Figure 1 depicts the current IAMD C2 methodology.

The new proposed C2 structure inserts a standing RJ-IAMD organization, at the operational level, between the theater level AADC and the service level tactical operators. RJ-IAMD organizations will better integrate service and host nation IAMD assets to achieve synchronization during planning and execution. RJ-IAMD organizations will provide a better baseline capability for conducting Phase 0-II activities. RJ-IAMD will also be capable of autonomous operations and thereby provide an added layer of redundancy in the C2 structure. Operating autonomously, RJ-IAMD organizations add resiliency when accounting

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<sup>3</sup> Joint Chiefs of Staff, Joint Publication 3-01 *Countering Air and Missile Threats* (Washington, DC: GPO, 2012), Chapter II.

<sup>4</sup> **Regional Air Defense Commander (RADC)** - Commander, subordinate to the area air defense commander, who is responsible for air and missile defenses in the assigned region and exercises authorities as delegated by the area air defense commander. **Sector Air Defense Commander (SADC)** - Commander, subordinate to an area/regional air defense commander, who is responsible for air and missile defenses in the assigned sector, and exercises authorities delegated by the area/regional air defense commander (Joint Publication 3-01 *Countering Air and Missile Threats* (Joint Chiefs of Staff, 2012), GL-16).

for combat degradation or operating in network degraded/denied environments. IAMD has been an evolving mission set for the last 70 years, since the Battle of Britain and the development of the German V2 rocket. Lessons learned from real-world operations, Large Force Exercises, and war-gaming, demonstrate the necessity to develop a new IAMD C2 structure to counter maturing threats in this new dimension of warfare.

### Unity of Effort

*“Command is central to all military action, and unity of command is central to unity of effort.”<sup>5</sup>*

Creating RJ-IAMDs will establish unity of command at the operational level of war. One of the most powerful mechanisms for a commander to achieve unity of effort is a C2 structure that delivers unity of command. Creating RJ-IAMDs will establish unity of command and better facilitate unity of effort in five areas: Offensive Counterair (OCA) and Defensive Counterair (DCA) synchronization, service and functional component integration, by eliminating dual reporting requirements, by simplifying Tactical Control (TACON) arrangements, and through better coalition integration.<sup>6</sup>

### OCA/DCA Synchronization

In order to have effective integrated air and missile defense, the Joint Force Commander (JFC) must integrate and synchronize both offensive and defensive activities in an overall IAMD efforts. OCA/DCA activities must identify, counter and target both air-

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<sup>5</sup> Joint Chiefs of Staff, Joint Publication 1 *Doctrine for the Armed Force of the United States* (Washington, DC: GPO, 2013), V-1.

<sup>6</sup> **Offensive counterair (OCA)** typically seeks to dominate enemy airspace and destroy, disrupt, or neutralize enemy aircraft, missiles, launch platforms, and their supporting structures as close to their sources as possible before and after launch. OCA activities include: Attack operation, Fighter escort, Suppression of enemy air defenses, Fighter sweep. **Defensive counterair (DCA)** normally attempts to degrade, neutralize, or defeat enemy air and missile attacks attempting to penetrate friendly airspace. **DCA activities include:** Active air and missile defense (Air defense, Ballistic missile defense), Passive air and missile defense (Joint Publication 3-01 *Countering Air and Missile Threats* (Joint Chiefs of Staff, 2012), I-1, I-3).



breathing and ballistic missile threats.<sup>7</sup> Joint doctrine has established a framework to conduct joint targeting through a six-phase targeting cycle.<sup>8</sup> To aid in targeting, the JFC may assign the J-3/J-5 or in more mature theaters form some or all of the following targeting organizations: the Joint Targeting Coordination Board, the Joint Targeting Working Group, and the Joint Targeting Element.<sup>9</sup> The JFACC, as the AADC, uses a similar six-stage joint air tasking cycle “to provide for the *efficient and effective* employment of the available joint air capabilities” (emphasis added).<sup>10</sup> Both of these systems attempt to balance various competing interests against the commander’s guidance and stated objectives. In this process targets are nominated, validated, and run through a complex 27 step system in an attempt to match resources to targets.<sup>11</sup>

The JFACC uses two products to transmit apportionment recommendations and decisions: the Joint Air Operations Plan (JAOP) and Air Operations Directive (AOD).<sup>12</sup>

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<sup>7</sup> **Air-breathing Missile-** A missile with an engine requiring the intake of air for combustion of its fuel, as in a ramjet or turbojet. **Ballistic Missile-** Any missile which does not rely upon aerodynamic surfaces to produce lift and consequently follows a ballistic trajectory when thrust is terminated (Joint Publication 3-01 *Countering Air and Missile Threats* (Joint Chiefs of Staff, 2012), GL-7, GL-10).

<sup>8</sup> **Joint Targeting Cycle-** 1. End State and Commander’s Objectives, 2. Target Development and Prioritization, 3. Capabilities Analysis, 4. Commander’s Decision and Force Assignment, 5. Mission Planning and Force Execution, 6. Assessment (Joint Publication 3-60 *Joint Targeting* (Joint Chiefs of Staff, 2013), II-3).

<sup>9</sup> **Joint Targeting Coordination Board-** A group formed by the joint force commander to accomplish broad targeting oversight functions that may include but are not limited to coordinating targeting information, providing targeting guidance and priorities, and refining the joint integrated prioritized target list. The board is normally comprised of representatives from the joint force staff, all components, and if required, component subordinate units. **Joint Targeting Working Group-** An action officer level venue, chaired by the JFE chief, J-2 (chief of targets), or similar representative, and meets as required to consolidate and prioritize the draft JIPTL and discuss targeting integration and synchronization issues raised by the JFC, staff, planning teams, and the JFC’s major subordinate commands. **Joint Fires Element-** An optional staff element that provides recommendations to the operations directorate to accomplish fires planning and synchronization (Joint Publication 3-60 *Joint Targeting* (Joint Chiefs of Staff, 2013), III-7, GL-6).

<sup>10</sup> *Ibid.*, C-2.

<sup>11</sup> Joint Chiefs of Staff, Joint Publication 3-09 *Joint Fires Support* (Washington, DC: GPO, 2014), III-14.

<sup>12</sup> The **JAOP** documents the JFACC’s plan to integrate and coordinate operations across all the phases of air power (0 through 5). The **AOD** is the JFACC’s written guidance which ensures air, space, and cyberspace operations effectively support the combined/joint force objectives while retaining enough flexibility to adjust to the dynamics of the range of and phases of military operations. The **AOD** provides operational objectives, effects, and tasks as well as their measures of effectiveness/performance for the ATO execution (Air Force Instruction 13-1, Volume 3 *OPERATIONAL PROCEDURES-AIR OPERATIONS CENTER (AOC)* (Secretary of the Air Force, 2011) 23).

Problems in this process can occur when targeting, plans and objectives are translated into an apportionment decision. During this process efforts are classified and sorted by types of air operations and the requesting agency.<sup>13</sup> A current problem is that the IAMD efforts span multiple types of air operations conducted by numerous Service and Functional components.<sup>14</sup> Synchronization and unity of effort may be degraded or lost as targets, once part of an overall IAMD operational concept, enter into a product focused scientific targeting process. This deficiency was highlighted during Operation DESERT STORM. During this operation, the Coalition Force Air Component Commander (CFACC) addressed the Iraqi Scud threat by targeting fixed sites through Aerial Interdiction. As the Iraqis' adapted and shifted efforts to their mobile Scud assets, the CFACC was unable to effectively counter the threat. This shortfall highlighted the requirement for a dedicated organization that is capable of planning and synchronizing OCA and DCA tasks into an IAMD effort. In order for IAMD activities to be effectively integrated and synchronized, they need representation during target nomination and the oversight to track each target nomination as it moves through the targeting process. RJ-IAMD organizations will provide the mechanism to integrate and synchronize OCA/DCA activities, nominate targets to the appropriate tasking agency, and assess target assignment and prosecution.

#### Service/Functional Component Integration and Synchronization

Creating RJ-IAMDs would also benefit IAMD effectiveness by better facilitating service and functional component integration and synchronization. Current doctrine suggests

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<sup>13</sup> Types of Air Operations- Offensive Air Support, Anti-Air Warfare, Assault Support, Air Reconnaissance, Electronic Warfare, and Control of Aircraft and Missiles (Marine Corps Warfighting Publication 3-2 *Aviation Operations* (Marine Corps Combat Development Command, 2000), 2-1).

<sup>14</sup> LeMay Center for Doctrine, Air Force Doctrine Publication Volume 4 *Operations* (Maxwell, AL: The LeMay Center, 2013) chpt 3.

the AADC can create RADCs for specific geographic areas.<sup>15</sup> Traditionally, these organizations have been single-service RADCs. This has been the preferred methodology because of a lack of interoperability between service C2 structures and a lack of knowledge in individual service capabilities. As IAMD concepts, counterair doctrine, and joint interoperability have evolved over the last 20 years, these friction points have been removed and integration is now an optimal reality. In addition to better service integration, functional integration of Special Operations Forces (SOF) and Cyber activities it will be essential in future IAMD operations. Creating RJ-IAMDs will reduce geographic and service seams that are a side effect of the current RADC concept.

Operation DESERT STORM provided an example of the necessity for service and functional component integration. At the beginning of the conflict, the Secretary of Defense initiated OPERATION SCORPION, an effort to seize Scud sites in western Iraq.<sup>16</sup> It wasn't until 7 February 1991, six months after the start of Desert Shield and three weeks after the commencement of offensive operations in Desert Storm that the coalition realized the ineffectiveness of a single service/single modality approach to Scud hunting. Beginning 7 February, Coalition forces started leveraging US and UK SOF teams to conduct targeting and direct actions against the Iraqi Scud threat.<sup>17</sup> While this resulted in some early success, a lack of focus and integrated effort towards the end of Desert Storm resulted in a spike in Scud launches during the final week of the six week conflict.<sup>18</sup> Desert Storm also highlighted the potential dangers of interservice seams during a 16 February Scud attack. In

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<sup>15</sup> Joint Chiefs of Staff, Joint Publication 3-01 *Countering Air and Missile Threats* (Washington DC: GPO, 2012), II-4.

<sup>16</sup> Michael Knights, *Cradle of Conflict: Iraq and the Birth of Modern U.S. Military Power* (Annapolis: Naval Institute Press, 2005), 29.

<sup>17</sup> William Rosenau, *Special Operations Forces and Elusive Enemy Ground Targets* (Arlington, VA: RAND, 2001), chap. 3.

<sup>18</sup> Ibid.

the southern defense sector, a Scud missile was fired, tracked, but not engaged because the assigned Army Patriot asset was undergoing maintenance. Had the Scud not broken up in flight the results could have been catastrophic, as debris impacted just off the coast of Al Jubayl while multiple US Naval and merchant ships were in port.<sup>19</sup> As theater air threats become more robust, RJ-IAMD organizations will be better postured to integrate and leverage service and functional capabilities, by both capitalizing on individual service strengths while also mitigating their individual weaknesses.

### Eliminating Dual Reporting

Creating RJ-IAMDs will simplify the current C2 structure by eliminating unnecessary dual reporting requirements. Under the current model a Navy RADC, for example, reports to their respective numbered fleet headquarters for coordination and planning, but also to the AADC during execution (See Figure 1). This C2 construct produces unnecessary friction for the theater IAMD effort. Creating an RJ-IAMD should not replace the Navy's TF-IAMD. The fleet still has a responsibility for protection of its assets, but implementing an RJ-IAMD will create a separate organization without the Navy reporting requirements. The creation of an RJ-IAMD, that would report to the AADC for planning, coordination, and execution, would streamline the current C2 structure and eliminate the dual reporting requirement. By creating RJ-IAMDs it would provide additional benefits over the existing C2 system by better integrating service and functional capabilities, while reducing the friction and inefficiency caused by the dual-reporting requirements.

### The Tactical Control (TACON) Question

In order for RJ-IAMDs to exercise unity of command they need TACON of service and functional component assets to conduct IAMD. RJ-IAMDs will require the same

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<sup>19</sup> Adam Siegel, "Scuds Against Al Jubayl?," *Proceedings* December 2002.

support/supported relationship that is currently provided to the JFACC for theater IAMD. In the current C2 construct, the JFACC is provided TACON of joint force aviation assets, but not Navy Aegis Ballistic Missile Defense (BMD) ships. The JFACC attempts to mitigate this risk and achieve unity of effort through Liaison Officers (LNOs) assigned to the AOC. A Navy AOC LNO contingent is typically no more than a handful of officers to coordinate an entire fleet's actions and requirements, with usually only one field grade officer with an IAMD background. Because the JFACC receives TACON of other services assets there is unity of command. However, because of the myriad of objectives the JFACC is trying to achieve, the unity of effort regarding IAMD is diluted.

An RJ-IAMD construct highlights that the best way to maximize unity of effort is through unity of command. Relinquishing TACON of assets is usually a contentious process as commanders husband their resources to retain flexibility and ensure assets are available to accomplish any task that is assigned. In order for commanders to be willing to relinquish excess assets, under the supporting/supported relationship, specific and detailed requirements would need to be presented. An RJ-IAMD, with a developed AADP, would be capable of articulating IAMD requirements as they relate to an OPLAN or OPORD. RJ-IAMDs would build trust and confidence in the effective management and utilization of TACON assets through regular war gaming and exercises with force providing units. This would not only build trust among the IAMD enterprise, but also increase proficiency in RJ-IAMD asset integration and execution. Additionally, force providers should not expect assets TACON to an RJ-IAMD would be assigned for the entire operation as apportionment and allocation of IAMD assets will vary depending on the phase and stage of the operations. Based on a mature air threat, force providers should expect, and plan for, a significant demand for IAMD

asset to occur during Phases I-II of an operation. The concept of establishing TACON of excess assets is not limited to the Aegis BMD ships. As the Marine Corps acquires new capabilities with the Joint Strike Fighter, it will have to justify the MAGTF's requirements for each phase/stage of an operation or consider releasing its assets for joint tasking.

### Coalition Host Nation Integration

Creating RJ-IAMDs would also better facilitate integration with coalition partners by collocating US forces in or near multinational coordination centers (MNCC).<sup>20</sup> Establishing RJ-IAMDs in close proximity to these MNCCs will facilitate integration and synchronization with a host nation's plans, forces, and capabilities. Under the current C2 construct, host nation integration for IAMD is limited to theater security cooperation exercises and habitual relationships formed through Status of Forces Agreement (SOFA) basing locations.

Coordinating, planning, and executing IAMD from a single theater AOC limits coalition interaction and relationship development. The type and level of coalition integration will be based on four factors: Critical Asset List (CAL) asset location, political relationships, threat levels, and host nation capabilities. Korea is an example of coalition integration in a mature IAMD theater. The IAMD threat level is high, there is a developed political relationship with a SOFA, and the US has established a sub-unified command with an IAMD organization to manage US IAMD assets and C2. Japan provides another example, but with additional opportunities and limitations. The threat level and political relationship are the same however, the Japanese have four KONGŌ Class BMD capable Destroyers and the sub-

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<sup>20</sup> MNCCs are "proven means of integrating the participating nations' military forces into the multinational planning and operations processes, enhancing coordination and cooperation, and supporting an open and full interaction within the MNF structure., (Joint Publication 3-16 *Multinational Operations* (Joint Chiefs of Staff, 2013), II-14).

unified command (USF-J) has no IAMD organization to C2 US and Japanese assets.<sup>21</sup> A third example of integration is with the Gulf Cooperative Council states (GCC).<sup>22</sup> The threat remains high and the GCC has acquired Patriot Advanced Capability 3 (PAC-3) and Terminal High Altitude Air Defense (THAAD), however they rely on the current US IAMD C2 model, benefitting from having the US Theater AOC in Qatar.<sup>23</sup> In examples like Japan, an RJ-IAMD organization are essential in integrating and synchronizing IAMD efforts in high threat areas that have not justified the creation of sub-unified commands. The DOD has recognized specific areas for increased support by the development of IAMD training centers in three Combatant Commands (CCMD).<sup>24</sup> In order to maximize our capabilities in defending assets on the CAL, it will be important to develop RJ-IAMD organization that can not only train, but facilitate IAMD C2 as the capabilities and relationships with coalition host nations mature. Creating better coalition host nation integration and synchronization will not only increase IAMD effectiveness during kinetic operations during Phase III, it will increase the overall IAMD capability across all phases of military operation.

### Stability

*“Stability is the ability to fill in important positions in an emergency quickly and satisfactorily.”<sup>25</sup>*

Establishing standing RJ-IAMDs will increase the baseline capability of theater IAMD across the six-phase joint operational construct.<sup>26</sup> Currently, regional IAMD

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<sup>21</sup> Missile Defense Agency, Aegis Ballistic Missile Defense, Accessed April 26, 2015, [http://www.mda.mil/system/aegis\\_bmd.html](http://www.mda.mil/system/aegis_bmd.html).

<sup>22</sup> **Gulf Cooperative Council states**- Saudi Arabia, Kuwait, Bahrain, Qatar, UAE, and Oman.

<sup>23</sup> U.S. Department of State, *Gulf Cooperation Council and Ballistic Missile Defense*, Accessed April 26, 2015, <http://www.state.gov/t/avc/rls/2014/226073.html>

<sup>24</sup> Pacific Air Forces, *PACAF establishes Pacific IAMD Center*, Accessed April 26, 2015, <http://www.pacaf.af mil/news/story.asp?id=123431563>.

<sup>25</sup> Milan Vego, *Joint Operational Warfare: Theory and Practice* (Newport, 2009), VIII-18.

capability is limited to sub-unified commands that have justified the requirement for a standing IAMD staff (i.e. USF-K).<sup>27</sup> The remainder of a Combatant Commander's (CCDR) AOR is either covered by the JFACC, by the theater AOC, or by individual services, based or deployed throughout the AOR. When faced with conducting IAMD, time is a critical operational factor. Specific IAMD time factors include: time to organize, time to train, and time to deploy. In the contest for control of the air domain, the force that can seize the initiative and more rapidly execute their decision cycle will have a significant advantage. Capitalizing on these advantages will allow the beneficiary to gain and maintain freedom of action and expose critical vulnerabilities in their adversary's Center of Gravity (COG).

#### Phase 0-II Operations

Standing RJ-IAMDs will be better postured to respond to IAMD threats during Phase 0-II operations. Current counterair doctrine focuses on Phase III operations. However, activities during Phase 0-II are critical in seizing the initiative in the early stages of a major conflict. At the operational level of war, time to train is an important and often overlooked consideration in the development of a campaign.<sup>28</sup> When facing a mature air threat, the time to train an *ad hoc* staff will be unacceptable as adversaries will attempt to seize and maintain the initiative. The transition time between Phase 0-III has also shortened with the increase in technology and globalization. Recent exercises, like Bold Alligator (BA) 2012, have highlighted the reality of creating ad hoc warfighting staffs at the operational level.<sup>29</sup> The

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<sup>26</sup> **Notional Operation Plan Phases:** Phase 0 Shape, Phase I Deter, Phase II Seize Initiative, Phase III Dominate, Phase IV Stabilize, Phase V Enable Civil Authority, Phase 0 Shape (Joint Publication 5-0 *Joint Operational Planning* (Joint Chiefs of Staff, 2011), III-39).

<sup>27</sup> United States Forces Korea, Organizational Chart, Accessed May 5, 2015, <http://www.usfk.mil/usfk/organization-chart.fkj3.602>.

<sup>28</sup> Milan Vego, *Joint Operational Warfare: Theory and Practice* (Newport: US Naval War College, 2009), III-19.

<sup>29</sup> Marine Corps Center for Lessons Learned, "Bold Alligator 2012 Final Report," CDR-10204 (2012), Accessed March 15, 2015, <https://www.mccell.usmc.mil/>, 8.



BA exercise construct began at the beginning of Phase II operations with the CFMCC assuming the duties of Officer in Tactical Command (OTC) on 01 Feb.<sup>30</sup> “Although its date-time-group (DTG) was 042212Z FEB, the message promulgating an AADC/RADC/SADC air defense plan was not executed until the morning of 6 February.”<sup>31</sup> This lesson learned highlighted two important facts: 1-There needs to be a focus on Phase 0-II operations (in both live and synthetic exercises), 2- Even in a relatively low threat environment it took four days to release an Area Air Defense Plan (AADP) and another two days to begin implementation. More troubling was the lack of overall command by the AADC over the RADC (Carrier Strike Group-12) and SADC (Expeditionary Strike Group-2). This lack of command and staff proficiency ultimately manifested itself when the CSG’s Classification, Identification, Engagement Area (CIEA) and Vital Area (VA) overlapped the SADC’s sector. On 7 February, both Air Defense organizations routinely engaged tracks, potentially resulting in fratricide, when their sectors overlapped.<sup>32</sup>

As operations mature from major tactical actions to operations, and forces and staffs aggregate, it will inevitably take time to train and reach the high level of proficiency that will be required to overcome the natural friction of military operations. Creating standing RJ-IAMDs will reduce the training time requirement as staffs will be familiar with their region’s operational environment, as well as the forward based and rotationally deployed units.

Creating RJ-IAMDs will assist and accelerate the targeting process through anticipatory planning, conducted internal to the RJ-IAMD during the deliberate planning

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<sup>30</sup> **Officer in Tactical Command (OTC)**- The senior officer with command authority over all forces within a maritime OA (Naval Warfare Publication 3-56 *Composite Warfare Doctrine* (Chief of Naval Operations, 2010), 1-9).

<sup>31</sup> Marine Corps Center for Lessons Learned, “Bold Alligator 2012 Final Report,” CDR-10204 (2012), Accessed March 15, 2015, <https://www.mccell.usmc.mil/>, 37.

<sup>32</sup> Ibid., A-48.

process. Under the current construct, valuable time is lost by waiting on the initiation of CAP or for the targeting cycle to begin. Typically the JFACC is the JTF Commander's executive agent for targeting. In practice, the Strategic Plans Team (SPT), a team from the AOC's Strategy Division, is tasked with the integration and synchronization of these efforts.<sup>33</sup> Air Force doctrine acknowledges that the SPT, with only a "small group of assigned members...along with a tailored group of attached members", may be insufficient during crisis action planning to meet time restraints.<sup>34</sup> During this critical time period the SPT will still be required to integrate all the joint force aviation operations, IAMD being but one of them. The 2012 update of CJCSM 3130.03 identified and added the requirement for a specific IAMD appendix (Appendix 17 to Annex C) in the development of OPLANs.<sup>35</sup> These OPLANs and AADPs, used as input tools, will significantly accelerate the process during deliberate planning or CAP and provide a better point of departure from which to deviate. RJ-IAMDs will add capability and stability across the six-phases of operations by providing an organization that is focused on the development and management OPLANs and AADPs that will be critical during Phase 0-II operations.

### Rules of Engagement

Rules of Engagement (ROE) are critical when conducting and legitimizing military operations. The process for drafting ROE is deliberate and time consuming. The requirement for appropriate ROE, based on mission and tasks, is essential during Phase III operations however, the planning and execution of graduated escalatory responses during Phase 0-II operations are equally important. Currently the Navy has Air and Missile Defense

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<sup>33</sup> Secretary of the Air Force, Air Force Instruction 13-1, Volume 3 *OPERATIONAL PROCEDURES-AIR OPERATIONS CENTER (AOC)* (Maxwell: LeMay Center, 2011), 26.

<sup>34</sup> Ibid.

<sup>35</sup> Joint Chiefs of Staff, Chairman Joint Chiefs of Staff Manual 3130.03 *Adaptive Planning and Execution (APEX) Planning Formats and Guidance* (Washington DC: GPO, 2012), E-C-103.

(AMD) OPTASKS that promulgate approved preplanned responses based on standing ROE and self-defense.<sup>36</sup> When moving from defensive tactical actions to major operations, these OPTASKs are insufficient for conducting Phase 0-II IAMD offensive activities. In future conflicts non-kinetic fires ROE, such as the Cyber 131 series, will be critical in controlling the operational environment prior to Phase III or the employment of kinetic fires.<sup>37</sup> As part of an OPLAN or AADP, RJ-IAMDs can reconcile offensive tasks with current ROE and identify any limitations or shortfalls. Additionally, establishing RJ-IAMDs in close proximity to a coalition partner's MNCC will aid in coordination and identifying national caveats earlier in the planning process. Creating RJ-IAMDs will better facilitate detailed planning and timely ROE approval as well as better integration with host-nation forces.

#### Maritime-Based CAL Defense

Creating RJ-IAMDs will assist the CCDRs in defending CAL assets in immature theaters or those dominated by the maritime domain.<sup>38</sup> In PACOM, with the theater JFACC controlling IAMD from Hickam AFB, the current C2 structure is ill-equipped to defend or rapidly respond to emerging IAMD threats across its entire AOR. This deficiency is based on the geographic size of the AOR, the physical distance between assets on the CAL, and the lack of basing options for USAF and USA assets.<sup>39</sup> Creating a Navy (7<sup>th</sup> Fleet) led RJ-IAMD, would alleviate problems associated with all three of these deficiencies. This organization would not be another service-centric RADC, but an organization dedicated to a

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<sup>36</sup> Navy-wide OPTASK AMD USFF 291630Z Jun 12

<sup>37</sup> Dennis Mandsager et al., *International Institute of Humanitarian Law Rules of Engagement Handbook* (Newport RI: US Naval War College, 2009), 59.

<sup>38</sup> **Immature theater-** A theater unable to sustain the initial phase of anticipated combat operations because of either inadequate resources...limited host-nation support; an immature theater has poor to nonexistent integration of resources to meet enemy ground, air, and air defense threats (*Joint Operational Warfare: Theory and Practice* (Milan Vego, 2009), GL-8).

<sup>39</sup> Pat Malackowski, *PACAF 2020: Air Armament for a Rebalanced Force*, Emerald Coast Convention Center, Fort Walton Beach, FL, 38<sup>th</sup> Air Armament Symposium, October 16-17, 2012 (Fort Walton Beach: National Defense Industry Association, Gulf Coast Chapter, 38<sup>th</sup> Symposium, 2012), 5.

specific region, with a developed AADP, that is capable of integrating service, functional and host-nation assets as required. Creating maritime-based RJ-IAMDs would also achieve a better force-space balance in areas where no IAMD staff/capabilities exists. See Figure 3 for a proposed IAMD C2 structure for a Maritime-domain based CAL defense.

Creating RJ-IAMDs would provide a distinct C2 organization for the Navy to aid in the transition between the tactical and operational level of war. Maritime Operations Center (MOC) doctrine provides two methods for organizing IAMD C2 in an attempt to provide flexibility and bridge the gap between the tactical and operational levels of war.<sup>40</sup> As the Navy attempts to integrate its activities into major joint operational-tactical actions, creating a TF-IAMD is an inefficient and timely process.<sup>41</sup> A standing maritime-based RJ-IAMD organization creates a C2 organization that is capable of coordinating and conducting operational level OCA and DCA tasks. The Navy's MOC IAMD cell and the Composite Warfare Commander construct are better suited for major and minor tactical OCA and DCA tasks.<sup>42</sup> Creating maritime-based RJ-IAMDs will provide an organization more capable of operational level IAMD planning and execution. Inserting this RJ-IAMD into the current IAMD C2 construct provides a better balance of forces versus requirements. RJ-IAMDs will provide specific organizations that can conduct IAMD at the various levels of war as operations increase in scale and scope.

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<sup>40</sup> 1- IAMD Cell, 2- TF-IAMD (Naval Tactics Techniques and Procedures 3-32.1 *Maritime Operating Center* (Chief of Naval Operations, 2013), 3-41).

<sup>41</sup> Milan Vego, *Joint Operational Warfare: Theory and Practice* (Newport: US Naval War College, 2009), V-3.

<sup>42</sup> Operational Tasks (OP)- OP 3.2.3 Attack Aircraft and Missiles (OCA), OP 6.1.4. Conduct DCA; Tactical Tasks (TA) - TA 3.2.8.1 Conduct OCA, TA 3.2.8.2 Conduct DCA (Universal Joint Task List, Chairman Joint Chiefs of Staff, 2015), 971, 1171, 1271-1272).

## Resiliency

*“...resilient command and control (C2) in an A2/AD environment will require centralized command, distributed control, and decentralized execution.”*<sup>43</sup>

Establishing RJ-IAMDs will increase resiliency in the overall theater IAMD C2 construct. Under the current construct, using centralized control from a single theater AOC creates a critical vulnerability (CV) that adversaries could exploit<sup>44</sup>. In a network degraded or denied environment, isolating the theater AOC from tactical units would be deleterious to achieving synchronization and unity of effort and significantly degrade operational level IAMD effectiveness. Creating multiple RJ-IAMDs would enhance the resiliency of the overall theater IAMD system by establishing organizations with the appropriate authorities, assets, and personnel which could conduct operational level IAMD tasks autonomously if required. Additionally, RJ-IAMDs would provide the CCDR/JFC options in the event the JFACC AOC or an adjacent RJ-IAMD becomes neutralized or combat ineffective.

### Communication Degraded or Denied Environment

Creating RJ-IAMDs will increase the resiliency in theater IAMD when operating in a communication degraded or denied environment. Doctrine cautions that adversaries could use air and missile capabilities to establish and enhance an Anti-Access/Area-Denial (A2/AD) defense, specifically through the targeting of communications networks.<sup>45</sup> Current mitigation measures rely on technological advantages to create robust and redundant

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<sup>43</sup> Gilmary Hostage III, Larry R. Broadwell, Jr., *Resilient Command and Control: The Need for Distributed Control*, JFQ 74, 3rd Quarter 2014, (Washington DC: NDU Press, 2014), 38.

<sup>44</sup> **Critical Vulnerability**- Those critical weaknesses (and sometimes critical strengths) open to the enemy's attack or exploitation (*Joint Operational Warfare: Theory and Practice* (Milan Vego, 2009), GL-6).

<sup>45</sup> Joint Chiefs of Staff, *Joint Publication 3-01 Countering Air and Missile Threats* (Washington DC: GPO, 2012), I-7. **Anti-Access**- Action intended to slow deployment of friendly forces into a theater or cause forces to operate from distances farther from the locus of conflict than they would otherwise prefer. A2 affects *movement* to a theater. **Area-Denial**- Action intended to impede friendly operations within areas where an adversary cannot or will not prevent access. AD affects *maneuver within* a theater (*Air-Sea Battle: Service Collaboration to Address Anti-Access & Area Denial Challenges* (Air-Sea Battle Office, 2013), 2).

communications networks. As adversaries increase their cyber capabilities, relying solely on qualitative advantages is an expensive and risky strategy.<sup>46</sup> Asymmetric attack, conventional attack, and the anticipated friction and fog of war are all factors which could degrade our ability to C2 Theater IAMD. The challenges of C2 in a communications degraded environment were highlighted in the U.S. Naval War College Global 2014 Game Report. Their findings emphasized the tension and confusion experienced when trying to relay information between the different tiers of command. It also revealed that current process and products to coordinate cross-domain operations in a communication degraded environment are insufficient.<sup>47</sup> Creating RJ-IAMDS will be a passive mitigation measure to reduce the severity of attacks on theater IAMD communications networks. In order for this to be an effective mitigation measure, RJ-IAMDS will need the delegated authorities to conduct IAMD autonomously if required. RJ-IAMDS will need to have a regional AOC (RAOC) or a limited contingency capability to manage a regional Air Tasking Order (ATO). Conducting regional IAMD through a RAOC is not a new concept; NORAD's C2 structure began using a regional model as the operational environment and air threat became more complex.<sup>48</sup> When facing a near-peer adversary who is capable of conducting Offensive Cyberspace Operations (OCO), the inevitable fog and friction of war necessitates the creation of RJ-IAMD organizations which are capable of autonomous operations.

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<sup>46</sup> Operational Protection- A series of actions and measures conducted in peacetime, crisis, and war aimed at preserving the effectiveness and survivability of military and nonmilitary sources of power deployed or located within the boundaries of a given theater (*Joint Operational Warfare: Theory and Practice* (Milan Vego, 2009), VIII-95).

<sup>47</sup> US Naval War College, *U.S. Naval War College Global 2014 Game Report* (2015), 50.

<sup>48</sup> March 2001- NORAD Combat Operations and Air Combat Command operations staff members agreed to the three Air Operating Centers (CONR, CANR, ANR) (North American Aerospace Defense Command Office of History, 2013), 28.

## Accounting for Combat Degradation

Inserting RJ-IAMDs into the current theater IAMD C2 construct will create redundancy and resiliency. Creating these RJ-IAMDs will also increase each service's operational IAMD proficiency and joint interoperability. Current counterair doctrine recommends an Air Force AADC with an Army DAADC (Figure 1). In order to account for degradation the JFACC would need to source a new RADC or absorb the losses and fight through the theater AOC. By creating RJ-IAMDs, the Navy will be better postured to provide the CCDR/JTF CMDR options in a contingency where the original RJ-IAMD becomes neutralized or combat ineffective. The previous section (Maritime-based CAL defense) identified some situations or environments which the Navy will be the primary choice as JFACC/AADC. The Navy recognized this requirement, and in 2009 established the Naval Air and Missile Defense Command (NAMDC). NAMDC then began training field grade officers through a Weapons and Tactics Instructor (WTI) program in 2013.<sup>49</sup> This command produces graduates which staff MOC IAMD cells, IAMD LNOs at the JFACC AOC, and potentially an RJ-IAMD. Under the proposed IAMD C2 construct, the AADC will have adjacent RJ-IAMDs which will be more familiar with the operational environment, already have an established working relationship with the JFACC/AADC, and will be more familiar with the regional Service and Functional component asset providers. When accounting for combat degradation, the RJ-IAMD model is more advantageous because it provides timelier reconstitution of capabilities.

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<sup>49</sup> Integrated Air and Missile Defense (IAMD) Weapons and Tactics Instructor (WTI), Naval Air and Missile Defense Command, Accessed April 28, 2015, <http://namdc.ahf.nmci.navy.mil/site%20pages/wti.htm>.

### **Counter-argument**

Some would argue the current theater IAMD C2 structure is not only adequate but optimal for confronting the current and future IAMD threat. In mature theaters, central planning and control is the best way to integrate theater and national assets. Based on the current C2 structure, and the required coordination and support, the JFACC is the appropriate level of command to conduct theater IAMD and integrate Service and Functional component assets. Lower level operational RJ-IAMDs will be unable to generate the mass and combat power required to counter an advanced counterair threat.

### **Rebuttal**

The creation of RJ-IAMD organization is an attempt to complement the current structure by adding additional capabilities, proficiency, and expertise when conducting operational level IAMD at the regional level. The JFACC, as the AADC, will still be responsible for theater IAMD, but will have an additional agency focused regionally at the operational level of war. Having a lower level regional organization will allow the JFACC to focus on: resourcing each RJ-IAMD with theater and national assets, IAMD seams between the CCMDs, and on coordinating efforts with STRATCOM for Global Ballistic Missile Defense Synchronization. RJ-IAMD organization will also have the inherent flexibility to expand or contract with resources and personnel, based on the operational environment or phase of operations. As a region needs more assets and resources, RJ-IAMDs will be resourced appropriately to meet mass and combat power required. The RJ-IAMD organization will be more than just a RADC; RJ-IAMD will be an operational level C2 organization, with cross-domain functional expertise and proficiency, that is capable of conducting IAMD autonomously or networked through the theater JFACC.



## Conclusion

*“If we lose the war in the air, we lose the war and we lose it quickly.”*<sup>50</sup>

The creation of RJ-IAMDs is in response to the changing character of war. When balancing the operational factors for IAMD, the key considerations are objective and threat. The objective has always remained constant; defend the CAL assets and maintain freedom of action. In the past 25 years air and missile threats have matured significantly in both quantity and quality. In order to rebalance the operational factors in our favor, the creation of RJ-IAMD organizations is essential to counter these challenges.

Certain regions have already rebalanced their forces, through the creation of sub-unified command with IAMD staffs, to defend critical assets and to ensure operational maneuver. Other regions, however, remain vulnerable. In the future security environment, as adversaries A2/AD capabilities mature, operational maneuver will be restricted in those regions that have not adapted to this changing character of war. Instituting this proposed RJ-IAMD C2 model provides the CCDR/JTF Commander significant advantages over the current model and will prove an essential element in countering evolving threats and guaranteeing our freedom of action.

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<sup>50</sup> Joint Chiefs of Staff, Joint Publication 3-01 3-01 *Countering Air and Missile Threats* (Washington, DC: GPO, 2012), I-1.

## FIGURES

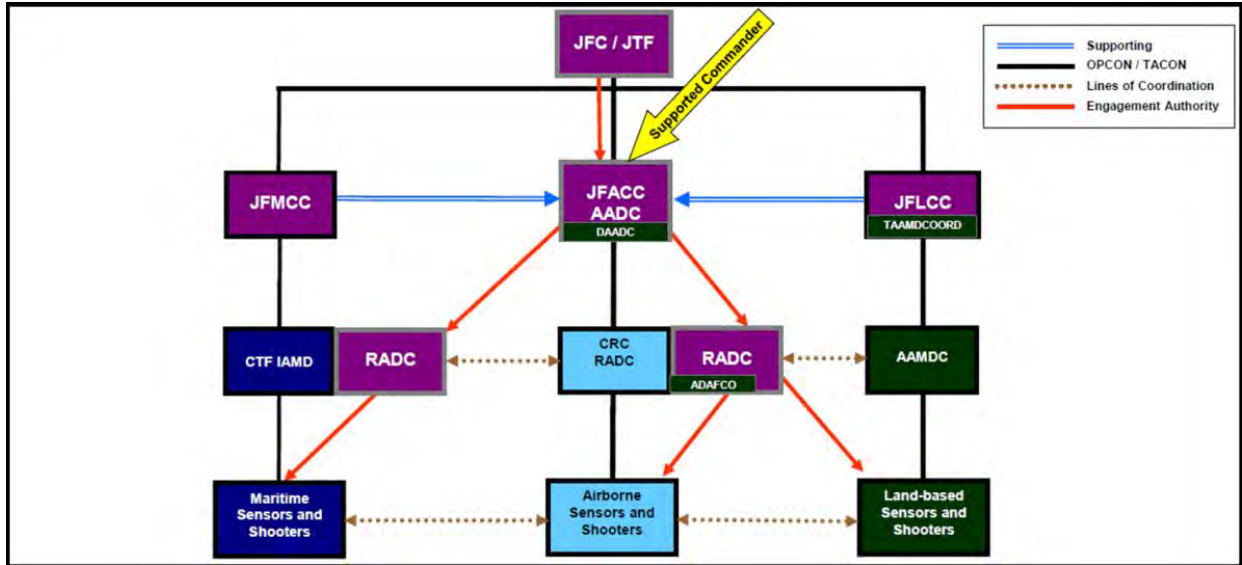


Figure 1: Counterair IAMD <sup>51</sup>

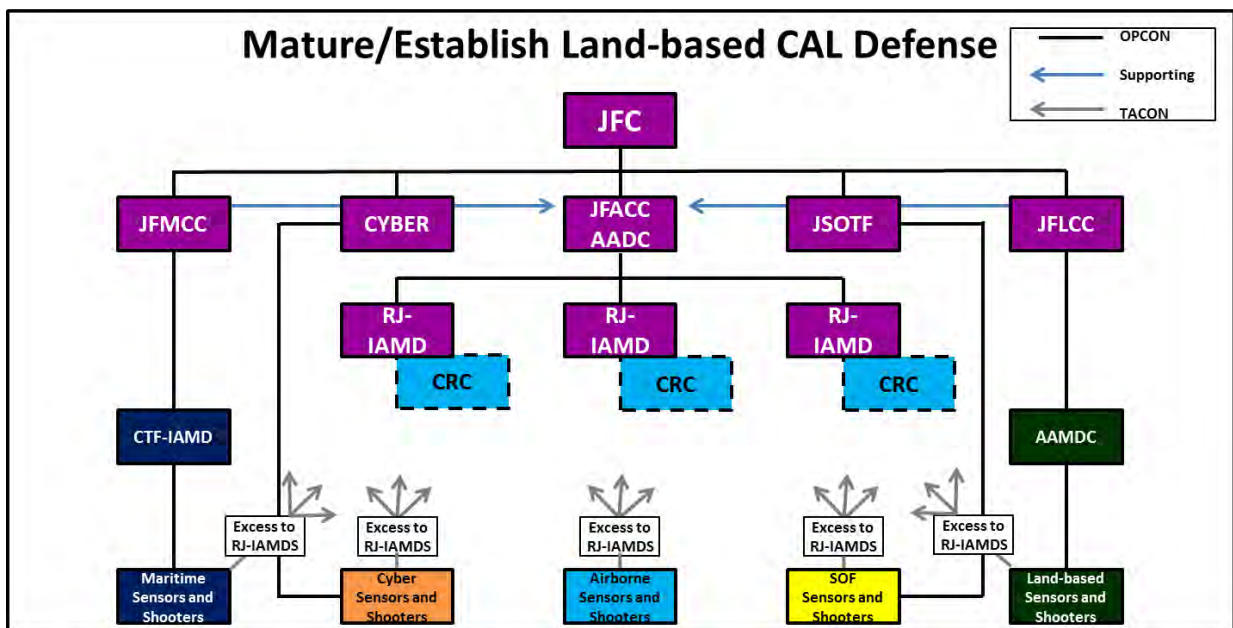
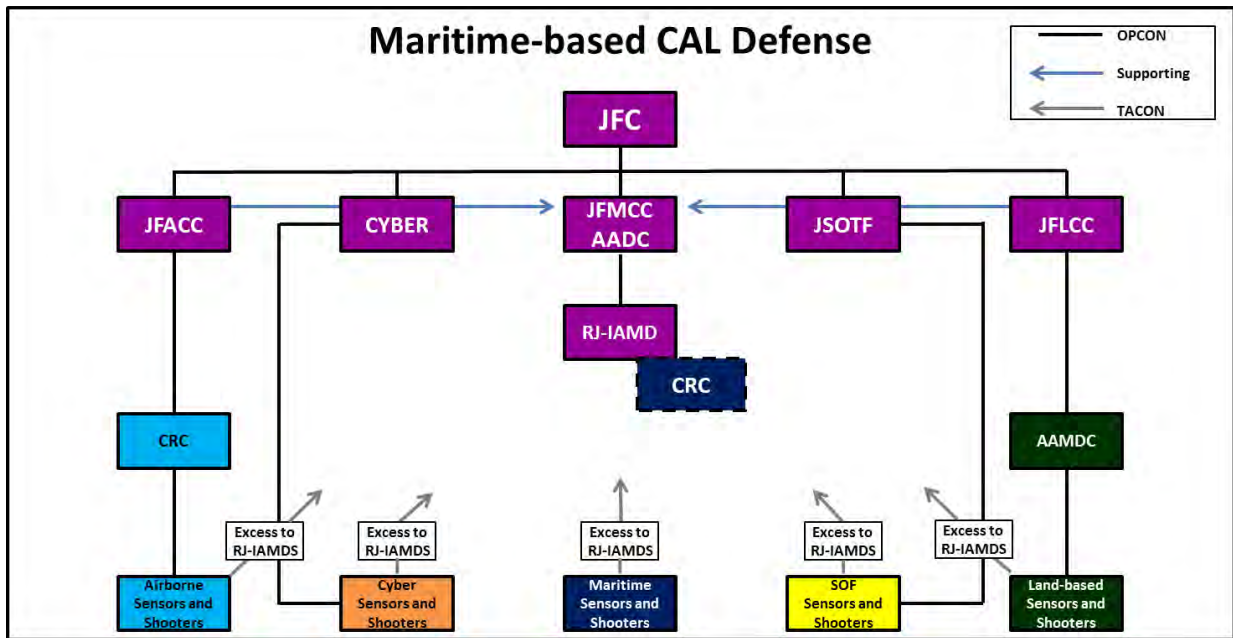


Figure 2: Land-based CAL Defense

<sup>51</sup> Stewart O'Bryan, "Brief IAMD C2 to CJCS Tank." (2010), 6. **Control and Reporting Center (CRC)** (Joint Publication 3-01 *Countering Air and Missile Threats* (Joint Chiefs of Staff, 2012), GL-2).



**Figure 3:** Maritime-based CAL Defense

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